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L1          3515 S KAZUHIKO E?/AU OR ENDO K?/AU
L2          1323 S TORU T?/AU OR TATSUMI T?/AU
L3          1117 S NISHIZAWA Y?/AU OR YASUHIRO N?/AU
L4          3284 S MORITA T?/AU OR TAKESHI M?/AU
L5             0 S L1 AND L2 AND L3 AND L4
L6            27 S L1 AND L2
L7             0 S L1 AND L3
L8             2 S L1 AND L4
L9             0 S L2 AND L3
L10           14 S L3 AND L4
L11       117105 S WU ?/AU OR LING WU ?/AU OR MEI LING WU ?/AU OR MEI ?/AU
L12          605 S KIELY ?/AU
L13            3 S L11 AND L12
L14       337747 S RECORD?
L15       138622 S LUBRIC?
L16            0 S L13 AND (L14 OR L15)
L17            0 S L6 AND L10
L18            8 S (L6 OR L8 OR L10) AND (L14 OR L15)
L19          324 S (L1 OR L2 OR L3 OR L4) AND L14
L20           86 S (L1 OR L2 OR L3 OR L4) AND L15
L21           26 S L19 AND L20
L22          345 S KAZUHIKO E/AU OR ENDO K/AU
L23          150 S TORU T/AU OR TATSUMI T/AU
L24           86 S NISHIZAWA Y/AU OR YASUHIRO N/AU
L25          209 S MORITA T/AU OR TAKESHI M/AU
L26            5 S L22 AND L23
L27            0 S L22 AND L24
L28            0 S L22 AND L25
L29            0 S L23 AND L24
L30            0 S L23 AND L25
L31            0 S L24 AND L25
L32           16 S (L22 OR L23 OR L24 OR L25) AND L14
L33            4 S (L22 OR L23 OR L24 OR L25) AND L15
L34          121 S KAZUHIKO ENDO/AU OR ENDO KAZUHIKO/AU
L35          198 S TORU TATSUMI/AU OR TATSUMI TORU/AU
L36           24 S NISHIZAWA YASUHIRO/AU OR YASUHIRO NISHIZAWA/AU
L37          268 S MORITA TAKESHI/AU OR TAKESHI MORITA/AU
L38           22 S L34 AND L35
L39            0 S L34 AND L36
L40            0 S L34 AND L37
L41            0 S L35 AND L36
L42            0 S L35 AND L37
L43           14 S L36 AND L37
L44            0 S L38 AND L43
L45            8 S (L38 OR L43) AND (L14 OR L15)
L46           21 S (L34 OR L35 OR L36 OR L37) AND L14
L47           33 S (L34 OR L35 OR L36 OR L37) AND L15
L48            8 S L46 AND L47
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L49 21 S L18 OR L26 OR L33 OR L45 OR L48
L50 16 S L32 NOT L49
L51 18 S L21 NOT (L49 OR L50)
L52 9 S L46 NOT (L49 OR L50 OR L51)

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L49 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:962286 Document No. 138:48808 Magnetic **recording** medium and its fabrication. **Morita, Takeshi**; Shinokawa, Taiji; Maezawa, Yoshiharu (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002367135 A2 20021220, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-171005 20010606.
AB In a magnetic **recording** medium having a ferromagnetic metal thin film, carbon film, and **lubricating** film on a non-magnetic substrate, the ferromagnetic metal thin film has a sheet resistance 1x103 - 1x105 (.OMEGA./.box.) to improve its durability. A method for fabricating the above me involves vacuum deposition of the ferromagnetic metal thin film in an O atm. while controlling the O intake into the film.
IT Ferromagnetic films
Magnetic memory devices
Magnetic tapes
Sheet resistance
(sheet resistance of ferromagnetic film of magnetic **recording** medium and its fabrication by vacuum deposition of ferromagnetic film)
IT Vapor deposition process
(vacuum; sheet resistance of ferromagnetic film of magnetic **recording** medium and its fabrication by vacuum deposition of ferromagnetic film)
IT 7440-48-4, Cobalt, properties
(sheet resistance of ferromagnetic film of magnetic **recording** medium and its fabrication by vacuum deposition of ferromagnetic film)

L49 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:611773 Document No. 137:178739 Magnetic **recording** medium and its fabrication. **Nishizawa, Yasuhiro**; **Morita, Takeshi**; Shinokawa, Taiji (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002230742 A2 20020816, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-19904 20010129.
AB A magnetic **recording** medium is described, which comprises a polymer substrate having magnetic and protective films on one side and a resistor layer on the other. The sheet resistance of the magnetic film is higher than that of the resistor layer to make the formation of the protective film efficient. Specifically, the magnetic **recording** medium may comprise a magnetic tape, and the protective film may comprise a plasma CVD C film. A method for fabricating the above medium is also described.
IT Vapor deposition process

(plasma; sheet resistance of films of magnetic **recording** medium and its fabrication by plasma CVD)

IT Coating materials
Magnetic films
Magnetic memory devices
Magnetic tapes
Sheet resistance
(sheet resistance of films of magnetic **recording** medium and its fabrication by plasma CVD)

IT 7440-44-0, Carbon, uses
(sheet resistance of films of magnetic **recording** medium and its fabrication by plasma CVD)

L49 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:486698 Magnetic **recording** medium. [Machine Translation].. Shinokawa, Taiji; **Nishizawa, Yasuhiro**; **Morita, Takeshi**; Oohata, Kushiro (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002183936 A2 20020628, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-374433 20001208.

AB [Machine Translation of Descriptors]. Impact being added by the tape in deck travelling system, the crack does not occur at reinforcement layer, the magnetic **recording** medium whose practical reliability is high is offered. The non magnetic baseplate (1) on the aspect of one side magnetic layer (2), reinforcement layer it possesses (5) on the other aspect, when reinforcement layer (5) breaks, when r, magnetic layer (2) breaks the extension of longitudinal direction, when designating the extension of longitudinal direction as m, in order r to become larger than m, it forms, protective layer (3), providing **lubricant** layer (4) and back coat layer (6) according to need, it obtains the magnetic **recording** medium (10).

L49 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:292130 Document No. 136:334088 Magnetic **recording** medium and its fabrication. Kuwahara, Kenji; Ohata, Hisayo; Shinokawa, Taiji; **Nishizawa, Yasuhiro**; **Morita, Takeshi** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002117525 A2 20020419, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-310465 20001011.

AB A durable magnetic **recording** medium comprises a non-magnetic substrate having a magnetic layer on one side and a stainless-steel reinforcement layer on the other. Addnl., the medium may have a C film on the magnetic layer and a **lubricating** layer on the C film. A method for fabricating the above medium is also described.

IT **Lubricants**
Magnetic memory devices
Magnetic tapes
(magnetic **recording** medium having stainless steel reinforcement, carbon film, and **lubricating** layer, and **recording** medium fabrication)

IT 7440-44-0, Carbon, uses 12597-68-1, Stainless steel, uses 12725-27-8, SUS303
(magnetic **recording** medium having stainless steel reinforcement, carbon film, and **lubricating** layer, and **recording** medium fabrication)
IT 99932-78-2 125768-39-0 219795-02-5 219795-03-6 219795-04-7 219795-07-0 223929-64-4 224049-65-4 394253-94-2 394253-95-3 394253-96-4 394253-97-5 394253-98-6
(magnetic **recording** medium having stainless steel reinforcement, carbon film, and **lubricating** layer, and **recording** medium fabrication)

L49 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:193159 Document No. 136:240497 Thin magnetic **recording** media having reinforcing layers on backside with good impact crack resistance. Shinokawa, Taiji; **Morita, Takeshi**; **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002074645 A2 20020315, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-252336 20000823.
AB The **recording** medium comprises a nonmagnetic substrate, a magnetic layer on one side, and a reinforcing layer on the other side, wherein tensile strength in the longitudinal direction of the reinforcing layer is greater than that of the magnetic layer. The reinforcing layer may be Al or its alloys.
IT Vapor deposition process
(of reinforcing layer; reinforced thin magnetic tapes with good impact crack resistance)
IT Ferromagnetic materials
Magnetic tapes
(reinforced thin magnetic tapes with good impact crack resistance)
IT 7440-48-4, Cobalt, uses
(magnetic layer; reinforced thin magnetic tapes with good impact crack resistance)
IT 7429-90-5, Aluminum, uses
(reinforcing layer; reinforced thin magnetic tapes with good impact crack resistance)

L49 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:104768 Document No. 136:160206 Thin magnetic tapes with good durability having stainless reinforcing layers on their back side and their manufacture. Kuwahara, Kenji; **Nishizawa, Yasuhiro** ; Shinokawa, Taiji; Ohata, Hisayo (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002042324 A2 20020208, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-220558 20000721.
AB The invention relates to a magnetic tape, useful for high-d. **recording**, contg. a stainless reinforcing layer on its back side. The tape may further contain a C layer on a (ferro)magnetic layer and **lubricant** layers on the C layer and/or on the sta\inless layer. An plasma polymd. N-contg. layer may be between

the C layer and the **lubricant** layer. The **lubricant** layer is deposited by applying an **lubricant** soln. in a hydrocarbon/alc. mixed solvent on a tape at relative humidity 10-40%.

IT Polyamides, uses
Polyesters, uses
(base film; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT Polymerization
(plasma, amine-contg. layer deposition; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT Ferromagnetic films
(**recording** layer; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT **Lubricants**
Magnetic tapes
(thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT Reinforced plastics
(thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 394253-99-7 394254-00-3
(Fomblin Z-DOL, **lubricant** layer contg.; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 24968-11-4, Polyethylene naphthalate 25038-59-9, PET polymer, uses 25230-87-9
(base film; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 125768-39-0 200958-57-2 219794-98-6 219795-02-5 219795-03-6 219795-04-7 219795-07-0 223929-64-4 394253-94-2 394253-95-3 394253-96-4 394253-97-5 394253-98-6 394254-01-4
(**lubricant** layer contg.; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 7440-48-4, Cobalt, uses
(magnetic layer; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 58479-39-3P, Propylamine polymer
(plasma-polymd. on C layer; thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

IT 12597-68-1, Austenitic stainless steel, uses 12725-27-8, SUS 303
(reinforcing backing layer; thin magnetic tapes with good durability having stainless reinforcing layers on their back side

and **lubricant** layers).

IT 7440-44-0, Carbon, uses
(thin magnetic tapes with good durability having stainless reinforcing layers on their back side and **lubricant** layers)

L49 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2001:726644 Document No. 135:282044 Magnetic **recording** medium having protective carbon layer. **Morita, Takeshi**; **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001273625 A2 20011005, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-90525 20000329.

AB The magnetic **recording** medium comprises, successively from the bottom, a nonmagnetic substrate, a magnetic layer, a C film, and a **lubricating** agent layer; wherein the C film contains N and shows Ramen spectra satisfying B/A .gtoreq.17 (B = peak intensity at .apprx.1540 cm-1, A = peak intensity calcd. by B minus fluorescence intensity in Gaussian function). Alternatively, the C film has no peaks at .apprx.1540 cm-1 in Ramen spectra. The C film shows both excellent protective effects and self-**lubrication** ability. Thus, the C film was prepd. by ECR plasma CVD using CH4 and N2.

IT Coating materials
(magnetic **recording** medium having protective layer made of carbon contg. nitrogen)

IT 7440-44-0, Carbon, processes
(contg. N, protective layer; magnetic **recording** medium having protective layer made of carbon contg. nitrogen)

IT 2074-87-5P, Carbon nitride (CN) 153715-92-5P, Carbon nitride (C4N) 171739-98-3P, Carbon nitride (C0.95N0.05) 171740-00-4P, Carbon nitride (C3N2) 196820-19-6P, Carbon nitride (C0.7N0.3)
(protective layer; magnetic **recording** medium having protective layer made of carbon contg. nitrogen)

L49 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2001:661734 Document No. 135:220024 Magnetic **recording** medium and process for producing magnetic **recording** medium. Ohchi, Yukikazu; Shinokawa, Yasuharu; **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2001065549 A1 20010907, 43 pp. DESIGNATED STATES: W: CN, KR, US. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP1421 20010226. PRIORITY: JP 2000-55659 20000301.

AB A magnetic **recording** medium which comprises a nonmagnetic substrate, a magnetic layer, a protective layer, a back coating layer, and **lubricant** layers, wherein the **lubricant** layer formed on the back coating layer comprises a **lubricant** comprising at least one compd. selected among fluorinated carboxylic acids and at least one compd. selected among fluorinated monoesters and fluorinated polyether compds.

IT Carboxylic acids, uses
(fluoro; manuf. of magnetic **recording** media with

lubricant layers)
IT **Lubricants**
Magnetic **recording** materials
(manuf. of magnetic **recording** media with **lubricant** layers)
IT Polyesters, uses
(manuf. of magnetic **recording** media with **lubricant** layers)

L49 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
2001:523676 Document No. 135:101362 Manufacture of magnetic **recording** media. **Nishizawa, Yasuhiro**; **Morita, Takeshi** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001195723 A2 20010719, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-6523 20000114.
AB C films that contain N and F atoms are formed on ferromagnetic thin metal films, and **lubricating** films are formed on the C films to improve transport wear resistance of magnetic **recording** media.
IT Ferromagnetic films
Lubricants
Magnetic **recording** materials
(manuf. of magnetic **recording** media contg. C and **lubricating** films on ferromagnetic films)
IT 14762-94-8, Fluorine atom, uses 17778-88-0, Nitrogen atom, uses
(manuf. of magnetic **recording** media contg. C films contg. N and F atoms on ferromagnetic films)
IT 7440-44-0, Carbon, uses
(manuf. of magnetic **recording** media contg. C films on ferromagnetic films)

L49 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1999:774411 Document No. 132:17439 Apparatus for manufacture of thin films and magnetic **recording** media. **Morita, Takeshi**; **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11335853 A2 19991207 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-147101 19980528.
AB In the app. for manuf. of a thin film while moving a substrate in a vacuum chamber, a substrate holder face is perpendicular to an opening of a discharge room. The **recording** media have C protective films, obtained by plasma CVD, showing uniform lamination d. in the thickness direction.
IT Video tapes
(plasma CVD app. for manuf. of carbon protective films of magnetic **recording** media)
IT Vapor deposition apparatus
(plasma; plasma CVD app. for manuf. of carbon protective films of magnetic **recording** media)
IT 7440-44-0, Carbon, processes
(plasma CVD app. for manuf. of carbon protective films of magnetic **recording** media)

L49 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1999:161016 Document No. 130:289685 RC delay reduction of 0.18.mu.m CMOS technology using low dielectric constant fluorinated amorphous carbon. Matsubara, Y.; Kishimoto, K.; **Endo, K.**; Iguchi, M.; **Tatsumi, T.**; Gomi, H.; Horiuchi, T.; Tzou, E.; Xi, M.; Cheng, L. Y.; Tribula, D.; Moghadam, F. (NEC Corporation, Kanagawa, 229-1198, Japan). Technical Digest - International Electron Devices Meeting 841-844 (English) 1998. CODEN: TDIMD5. ISSN: 0163-1918. Publisher: Institute of Electrical and Electronics Engineers.
AB A low-k fluorinated amorphous carbon (a-C:F: dielec. const. 2.5) film as inter-metal dielec. (IMD) has been successfully integrated in 0.18-.mu.m CMOS technol. The RC delay of a ring oscillator with loaded wiring (length: 10mm) is reduced by 22% using an a-C:F IMD compared with that using a SiO2 IMD. The thermal stability problems from integrating a-C:F IMD with a W plug (deposition temp.: 370.degree.C, film stress: 1.5.times.1010dyne/cm2) can be overcome by using post a-C:F deposition anneal. This leads to less a-C:F outgassing at temps. up to 375.degree.C.
IT Fluorination
(RC delay redn. of 0.18.mu.m CMOS technol. using low dielec. const. fluorinated amorphous carbon)
IT MOS devices
(complementary; RC delay redn. of 0.18.mu.m CMOS technol. using low dielec. const. fluorinated amorphous carbon)
IT Oscillators
(redn. of RC delay of ring oscillator with loaded wiring by using fluorinated amorphous carbon)
IT 7440-44-0, Carbon, uses
(amorphous fluorinated; RC delay redn. of 0.18.mu.m CMOS technol. using low dielec. const. fluorinated amorphous carbon)

L49 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1998:700877 Document No. 129:349405 Aluminum wiring reliability of fluorinated amorphous carbon interlayer. Iguchi, M.; Matsubara, Y.; Ito, S.; **Endo, K.**; Koyanagi, K.; Kishimoto, K.; Gomi, H.; **Tatsumi, T.**; Horiuchi, T. (ULSI Device Development Labs, NEC Corporation Sagamihara, Kanagawa, 229, Japan). Materials Research Society Symposium Proceedings, 511(Low-Dielectric Constant Materials III), 341-346 (English) 1998. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.
AB The authors studied the Al wiring reliability of fluorinated amorphous C (a-C:F) interlayer dielecs. (ILD) using electromigration tests at the wafer level under accelerated stress conditions with c.d. ranging from 25-32 MA/cm2 and a the substrate temp. of 300 K. The a-C:F film is one of the low-k org. materials with a dielec. const. of 2.5. The thermal cond. of the a-C:F film (0.108 W/m.cntdot.K) is about one order lower than that of SiO2 (1.2 W/m.cntdot.K). Joule heating effect is enhanced by the lower thermal cond. of a-C:F and the wiring lifetime for a-C:F ILD is about one order lower than that for SiO2 ILD under high current stress. However, when the wiring lifetime is plotted as a function

of the wiring temp., the wiring lifetimes for both a-C:F ILD and SiO2 ILD became almost the same. The degrdn. of the wiring lifetime for a-C:F ILD is explained by the increase of the wiring temp. which is caused from Joule heating. Also, the activation energy of the electromigration for a-C:F ILD has the same value as that of SiO2 ILD at a temp.

IT Dielectric films
Electric failure
(aluminum wiring reliability of fluorinated amorphous carbon interlayer)

IT Electrodiffusion
(aluminum wiring reliability of fluorinated amorphous carbon interlayer tested by)

IT Films
(amorphous; aluminum wiring reliability of fluorinated amorphous carbon interlayer)

IT Diffusion activation energy
Electric heating
(in aluminum wiring reliability of fluorinated amorphous carbon interlayer)

IT Thermal conductivity
(of amorphous fluorinated carbon; aluminum wiring reliability of fluorinated amorphous carbon interlayer in relation to)

IT 7782-41-4, Fluorine, uses
(aluminum wiring reliability of fluorinated amorphous carbon interlayer)

IT 7440-44-0, Carbon, properties
(aluminum wiring reliability of fluorinated amorphous carbon interlayer)

IT 7440-32-6, Titanium, uses 11100-89-3 25583-20-4, Titanium mononitride
(aluminum wiring reliability of fluorinated amorphous carbon interlayer)

L49 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

1998:700872 Document No. 129:349640 Copper damascene using low dielectric constant fluorinated amorphous carbon interlayer. Matsubara, Y.; **Endo, K.**; Iguchi, M.; Ito, N.; Aoyama, K.; **Tatsumi, T.**; Horiuchi, T. (ULSI Device Development Laboratories, NEC Corporation, Kanagawa, 229, Japan). Materials Research Society Symposium Proceedings, 511(Low-Dielectric Constant Materials III), 291-296 (English) 1998. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.

AB A new interconnect technique is developed by using a low-k (.epsilon.r=2.5) org. interlayer (fluorinated amorphous carbon: a-C:F) and a low-resistivity metal line (copper). The new technique attains a conduction in both the capacitance of the interlayer and the resistance of the metal line. It is found that a-C:F on Cu reduces reflection to 10% for Kr-F line lithog. However, a-C:F cannot act as a protection layer for oxidn. even at 200.degree.C in atm. ambient annealing. Cu diffusion into a-C:F is about 100 nm at the annealing temp. of 450.degree.C. The resistivity of the Cu line

is 2.3-2.4 .mu..OMEGA. .cntdot. cm for the 0.5-.mu.m line width. Although the leakage current of the a-C:F ILD is one order higher than that of the SiO2 ILD, elec. isolation is acceptable at < 20 V when annealing is carried out at 350.degree.C in a vacuum.

IT Lithography
(Kr-F line; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT Dielectric constant
Electric capacitance
Electric resistance
Interconnections (electric)
Leakage current
Metal lines
Oxidation
(copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT Annealing
(oxidative; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT Optical reflection
(redn. of; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT 7440-44-0, Carbon, properties
(amorphous, fluorinated; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT 51311-17-2, Carbon fluoride
(amorphous; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

IT 7440-50-8P, Copper, properties
(damascene; copper damascene using low dielec. const. fluorinated amorphous carbon interlayer)

L49 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

1998:103550 Document No. 128:211725 Adhesion of a-C:F during oxygen plasma annealing. Matsubara, Y.; **Endo, K.**; **Tatsumi, T.**; Horiuchi, T. (ULSI Device Development Labs, Microelectronics Res. Labs., NEC Corp., Kanagawa, 229-11, Japan). Materials Research Society Symposium Proceedings, 476(Low-Dielectric Constant Materials III), 19-24 (English) 1997. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.

AB Fluorinated amorphous C (a-C:F) films sandwiched between layers of SiO2 are proposed as an interlayer dielec. (ILD) structure to enhance resistance to O plasma. This study describes adhesion failure mechanisms for the sandwiched fluorinated amorphous C film (a-C:F) structure during O plasma annealing. The authors found 3 failure modes: (1) capping SiO2 layer peels off, (2) thickness redn. of a-C:F by decompn., and (3) etching phenomena at the interface between SiO2 and a-C:F by CFx outgassing from a-C:F. The outgassed CFx radicals were stored at the interfaces and the etching of SiO2 occurred during the subsequent 150.degree. O plasma resist removal process. Thermal decompn. of a-C:F ILD sandwiched between layers of SiO2 was performed to det. the outgassed species, as well as the

thickness redn. of a-C:F.

IT Adhesion, physical
Degassing
Dielectric films
Plasma
Thermal decomposition
(adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT Films
(amorphous; adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT Annealing
Decomposition
Etching
Vapor deposition process
(plasma; adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT 7782-41-4, Fluorine, uses
(adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT 74-84-0, Ethane, uses 76-16-4, Perfluoroethane
(adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT 7440-44-0, Carbon, processes 7631-86-9, Silica, processes
(adhesion failure of fluorinated amorphous C between silica layers during O plasma annealing)

IT 3889-75-6, Carbon monofluoride
(outgassing from amorphous fluorinated carbon films)

L49 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

1997:565562 Document No. 127:255944 Low-k fluorinated amorphous carbon interlayer technology for quarter micron devices. Matsubara, Y.; **Endo, K.**; **Tatsumi, T.**; Ueno, H.; Sugai, K.; Horiuchi, T. (ULSI Device Development Labs., NEC Corp., Kanagawa, 229, Japan). Technical Digest - International Electron Devices Meeting 369-372 (English) 1996. CODEN: TDIMD5. ISSN: 0163-1918. Publisher: Institute of Electrical and Electronics Engineers.

AB The authors have developed a new interlayer technol. that attain 50% redn. in capacitance and keep good process compatibility with current Chem. Mech. Polishing (CMP) based multi-level metalization (MLM) process. This technol. uses fluorinated amorphous C (a-C:F) with a dielec. const. of 2.3, sandwiched between layers of SiO2, which are formed in sequential by high d. plasma-CVD (HDP-CVD) technique. Top SiO2 layer assures O plasma resistance during via etching, metal etching, and resist removal.

IT Films
(amorphous; plasma CVD of fluorinated amorphous carbon interlayer between silica layers)

IT Polishing
(chem.-mech.; in fluorinated amorphous carbon interlayer technol. for quarter micron devices)

IT Dielectric films
MOS devices
Semiconductor device fabrication
(fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT Semiconductor devices
(microscale; fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT Dielectric constant
(of fluorinated amorphous carbon interlayer)
IT Etching
(plasma; in fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT Vapor deposition process
(plasma; plasma CVD of fluorinated amorphous carbon interlayer between silica layers)
IT Etching
(selective; in fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT Etching masks
(silica; in fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT Interconnections (electric)
(via; fluorinated amorphous carbon interlayer technol. for quarter micron devices with)
IT 7440-44-0, Carbon, properties
(fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT 7782-41-4, Fluorine, uses
(fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT 7631-86-9, Silica, processes 7631-86-9D, Silica, silicon-excess, processes
(plasma CVD of fluorinated amorphous carbon interlayer between silica layers)
IT 75-73-0, Carbon tetrafluoride 7782-44-7, Oxygen, uses
(plasma etchant; in fluorinated amorphous carbon interlayer technol. for quarter micron devices)
IT 7429-90-5, Aluminum, processes
(via plug; fluorinated amorphous carbon interlayer technol. for quarter micron devices with)

L49 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1997:562414 Document No. 127:242272 Production method of magnetic **recording** medium.. **Nishizawa, Yasuhiro**; **Morita, Takeshi** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09212859 A2 19970815 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-19618 19960206.
AB The title method involves supplying a hydrocarbon gas .gtoreq.0.05 SCCM per 1 cm2 of plasma-irradn. area and applying 5x10-19 - 1x10-17 W per C atom/s to form a C protective film which goes easy on a

recording head.
IT Vapor deposition process
(chem., plasma coating; of carbon in prodn. of magnetic **recording** medium)
IT Magnetic tapes
(of carbon in prodn. of magnetic **recording** medium)
IT 7440-44-0, Carbon, processes
(plasma CVD coating in prodn. of magnetic **recording** medium)

L49 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1997:385303 Document No. 127:43852 Magnetic **recording** material with good abrasion resistance and its manufacture. **Nishizawa, Yasuhiro**; Niiyama, Junichi; Uchida, Noriyuki (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09120529 A2 19970506 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-277437 19951025.
AB The material comprises a nonmagnetic support successively coated with a magnetic metal thin film, a protective layer, an orientation layer, and a **lubricant** layer. The orientation layer is manufd. by (A) rubbing an org. substance on a C thin-film layer with an unwoven cloth or film or (B) rubbing a C thin-film layer with an org. substance-based unwoven cloth or film. Good adhesion between the C film and the **lubricant** layer was obtained and the material showed good abrasion resistance and repeating durability.
IT **Lubricants**
Magnetic tapes
(magnetic **recording** material with good abrasion resistance and its manuf.)
IT Polyamides, uses
Polyesters, uses
Polyesters, uses
(orientation layer; magnetic **recording** material with good abrasion resistance and its manuf.)
IT 9002-88-4, Polyethylene 25038-59-9, Poly(ethylene terephthalate), uses
(orientation layer; magnetic **recording** material with good abrasion resistance and its manuf.)
IT 7440-44-0, Carbon, uses
(protective layer; magnetic **recording** material with good abrasion resistance and its manuf.)

L49 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
1975:6399 Document No. 82:6399 Effects of dissolved oxygen in saline on corrosive wear of steel. **Endo, K.**; Komai, K.; Shiomi, H. (Dep. Mech. Eng., Kyoto Univ., Kyoto, Japan). Wear, 30(3), 285-98 (English) 1974. CODEN: WEARAH. ISSN: 0043-1648.
AB The corrosion wear of fully annealed 0.34% C steel in NaCl soln. of deionized water contg. 1 or 4 ppm O was studied. The thickness of the oxide layer varying with test conditions affects both the wear

and corrosion rates, and it depends on O concn., temp., and the contact loads. In O-satd. soln. the damage is caused by corrosion fatigue, and the wear rate is const. at a load <3-4 Kg owing to changes in contact conditions. At 1 ppm O the wear rate slightly decreases with increasing load because of the effective **lubrication** by the corrosion products.

IT 7782-44-7, reactions
(corrosion wear in salt water contg., of annealed carbon steel)

IT 11121-90-7, reactions
(corrosion wear of annealed, in salt water contg. oxygen)

=> d l50 1-16 cbib abs it

L50 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2003 ACS on STN

1999:376905 Document No. 131:38645 Preparation of AlN films as insulation gap layers for MR heads by magnetron sputtering enhanced with an inductively coupled rf plasma. **Morita, T.**; Yamamoto, T.; Kurauchi, T.; Matsuura, M. (Tsukuba Institute for Super Materials, ULVAC Japan, Ltd., Tsukuba, 300-4247, Japan). Nippon Oyo Jiki Gakkaishi, 23(4-2), 1161-1164 (Japanese) 1999. CODEN: NOJGD3. ISSN: 0285-0192. Publisher: Nippon Oyo Jiki Gakkai.

AB AlN films for use as insulation gap layers for MR or GMR heads were prepd. by magnetron sputtering enhanced with an inductively coupled RF plasma at various substrate temps. AlN films deposited on substrates at room temp. have amorphous structure and to possess poor corrosion resistance to hot H2O. However, AlN films prepd. on 200.degree. substrates were crystd. to some extent and displayed good corrosion resistance. All the AlN films, regardless of the substrate temp., behaved as insulators. The breakdown elec. fields of the AlN films were all .apprx.0.6 GV/m and leakage currents were .apprx.10-8 A/mm2 (1OV). The AlN films prepd. at 200.degree. are suitable for application in MR and GMR heads.

IT Electric breakdown
Electric current-potential relationship
Leakage current
(in prepn. of AlN films as insulation gap layers for MR heads by magnetron sputtering enhanced with inductively coupled rf plasma)

IT Dielectric films
Magnetic **recording** heads
(prepn. of AlN films as insulation gap layers for MR heads by magnetron sputtering enhanced with inductively coupled rf plasma)

IT Sputtering
(radio-frequency plasma magnetron; prepn. of AlN films as insulation gap layers for MR heads by magnetron sputtering enhanced with inductively coupled rf plasma)

IT 24304-00-5, Aluminum nitride (AlN)
(prepn. of AlN films as insulation gap layers for MR heads by magnetron sputtering enhanced with inductively coupled rf plasma)

L50 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2003 ACS on STN

1998:399375 Document No. 129:143612 Electrical properties of very thin

Al2O3 films prepared by magnetron sputtering enhanced with an inductively coupled rf plasma. **Morita, T.**; Kurauchi, T.; Matsuura, M. (Tsukuba Institute for Super Materials, ULVAC Japan, Ltd., Tsukuba, 300-4247, Japan). Nippon Oyo Jiki Gakkaishi, 22(4-2), 433-436 (Japanese) 1998. CODEN: NOJGD3. ISSN: 0285-0192. Publisher: Nippon Oyo Jiki Gakkai.

AB Very thin Al2O3 films of 10-nm thickness, which are required as insulation gap layers for future magnetic **recording** storage devices, were prepd. by a newly developed magnetron sputtering system based on a process that the authors have termed magnetron sputtering enhanced with an inductively coupled radiofrequency plasma. The breakdown voltage of the Al2O3 films prepd. by reactive sputtering was >5 MV/cm. However, the leakage current of the films was 10-5-10-6 A/mm2. The leakage current of the films was reduced to 1/3-1/50 of its original values by changing the deposition method from simple reactive sputtering to plasma oxidn. of the Al film followed by reactive sputtering (double-layer Al2O2 films).

IT Plasma
(RF; elec. properties of very thin Al2O3 films prepd. by magnetron sputtering enhanced with an inductively coupled rf plasma)

IT Dielectric films
Electric properties
Films
Magnetic memory devices
Sputtering
(elec. properties of very thin Al2O3 films prepd. by magnetron sputtering enhanced with an inductively coupled rf plasma)

IT Dielectric strength
Magnetron sputtering
(of very thin Al2O3 films prepd. by magnetron sputtering enhanced with an inductively coupled rf plasma)

IT 1344-28-1P, Alumina, properties
(elec. properties of very thin Al2O3 films prepd. by magnetron sputtering enhanced with an inductively coupled rf plasma)

L50 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2003 ACS on STN

1990:15310 Document No. 112:15310 Magnetic properties and magnetoresistance effect in evaporated nickel-iron-cobalt films. **Tatsumi, T.**; Yamada, K.; Motomura, Y.; Urai, H. (Microelectron. Res. Lab., NEC Corp., Kawasaki, 213, Japan). Nippon Oyo Jiki Gakkaishi, 13(2), 237-40 (Japanese) 1989. CODEN: NOJGD3. ISSN: 0285-0192.

AB The anisotropic magnetoresistance (MR) ratio and magnetic anisotropy field HK were examd. for (Ni0.82Fe0.18)100-xCox and Ni82Fe18-xCOx evapd. films and those annealed at 320.degree. for 2 h to evaluate their usefulness as magnetic head materials. For the (Ni0.82Fe0.18)100-xCox films, MR ratio is almost const. regardless of change in Co concn. For the Ni82Fe18-xCox films, MR ratio increases as the Co concn. increases. MR ratio after the annealing

raises to 5% in the Co concn. range >6 wt.%. HK Increases as the Co concn. increases, and is not changed by the annealing. The increase in MR ratio by the annealing for the Ni82Fe18-xCox films is related to inhomogeneous strain and lattice defects. For Ni82Fe12Co6 film, 5.1% MR ratio and 7.8 Oe HK were obtained. These values seem appropriate for application to magnetic heads.

IT Magnetic anisotropy
Magnetoresistance
(of cobalt-iron-nickel evapd. films)

IT **Recording** materials
(magnetic, cobalt-iron-nickel films for)

IT 124279-87-4
(magnetic properties and magnetoresistance of evapd. films of)

IT 11115-27-8, Iron 18, nickel 82 124279-89-6 124279-90-9
(magnetoresistance of)

IT 124279-88-5
(magnetoresistance of evapd. films of)

=> d l52 1-9 ti au

L52 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Magnetic **recording** tapes having metal backcoat layers with no curing, and their manufacture
IN Okumura, Hideki; Taichi, Yukikazu; Shinokawa, Taiji; **Nishizawa, Yasuhiro**; Matsui, Masaki

L52 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Apparatus for manufacturing magnetic **recording** media
IN **Nishizawa, Yasuhiro**

L52 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Apparatus for treatment of large film without defects
IN **Nishizawa, Yasuhiro**

L52 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of magnetic **recording** medium
IN **Nishizawa, Yasuhiro**

L52 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Reliability of obliquely deposited Co-O thin film with carbon protective layer
AU Yoshida, Hideki; **Nishizawa, Yasuhiro**; Ouhata, Hisayo

L52 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Aluminum alloy-spattering targets and manufacture thereof
IN **Morita, Takeshi**; Kawaguchi, Yukio; Matsubuchi, Sachiko

L52 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Metal-evaporated video tape with diamond-like-carbon protective layer
AU Yoshida, Hideki; **Nishizawa, Yasuhiro**; Fujita, Takashi;

Murai, Mikio; Takahashi, Kiyoshi; Odagiri, Masaru

L52 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Devices for determining water quality data
IN Amano, Kunihiko; Terazono, Katsuji; Sanpei, Shigeru; **Endo, Kazuhiko**

L52 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Development of a new device for measuring the corrosion rate and evaluation of corrosion resistance of dental silver alloys
AU **Endo, Kazuhiko**; Hirano, Susumu; Hirasawa, Tadashi

=> d l52 1-5,7 cbib abs it

L52 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
2002:925472 Document No. 138:10773 Magnetic **recording** tapes having metal backcoat layers with no curing, and their manufacture. Okumura, Hideki; Taichi, Yukikazu; Shinokawa, Taiji; **Nishizawa, Yasuhiro**; Matsui, Masaki (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002352416 A2 20021206, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-155350 20010524.
AB The backcoat layer comprises (A) a 1st layer of metals and (B) a 2nd layer manufd. by applying compns. contg. nonmagnetic particles and binders, drying at Td (.degree.), and annealing at Ta (.degree.; Ta <Td), wherein the glass transition temp. of the binders Tg satisfies the relationship of Ta .ltoreq. Tg .ltoreq. Ta + 15.
IT Carbon black, uses
(BP 800, backcoat contg.; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT Polyurethanes, uses
(backcoat binders; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT Magnetic tapes
(magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT Polyamides, uses
Polyesters, uses
(substrate; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT 127475-73-4, UR 8200
(UR 8200, backcoat binders; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses
(backcoat; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT 7440-48-4, Cobalt, uses
(**recording** layer; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)
IT 24968-11-4, Polyethylene naphthalate 25038-59-9, PET polymer, uses 25230-87-9

(substrate; magnetic tapes having multilayer backcoat layers with good stiffness and no curing)

L52 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
1999:387818 Document No. 131:38659 Apparatus for manufacturing magnetic **recording** media. **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11161949 A2 19990618 Heisei, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-329832 19971201.
AB The app. contain support rollers which are divided into several arc segments where elec. potential for attaching magnetic **recording** media to the rollers is varied according to the resp. segments so that thermal wear and wrinkles are avoided when spinning motion of the rollers is increased.
IT Magnetic **recording** materials
(app. for manufg. magnetic **recording** media)
IT Electric potential
(in app. for manufg. magnetic **recording** media)

L52 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
1999:114358 Document No. 130:175628 Apparatus for treatment of large film without defects. **Nishizawa, Yasuhiro** (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11044659 A2 19990216 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-201585 19970728.
AB The app. has a means for reading-out of defect data in a film, a means for controlling processing conditions based on the defect data, a means for inspection of processing, and a means for **recording** the defect data on the film if defects are detected in the inspection. The app. is useful for manuf. of magnetic tapes, magnetic disks, and capacitors. Defect-free protective films for magnetic tapes are obtained by using a plasma CVD app. having their means.
IT Coating materials
Magnetic disks
Magnetic tapes
(app. for treatment of large film without defects in manuf. of magnetic tape or capacitor)
IT Capacitors
(film; app. for treatment of large film without defects in manuf. of magnetic tape or capacitor)
IT Vapor deposition apparatus
(plasma; app. for treatment of large film without defects in manuf. of magnetic tape or capacitor)

L52 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN
1997:18236 Document No. 126:69172 Manufacture of magnetic **recording** medium. **Nishizawa, Yasuhiro** (Matsushita Electric Ind Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08273153 A2 19961018 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-67739 19950327.
AB A method for depositing a no. of thin films using a base film having

a metal magnetic film as a counter electrode in a plasma CVD app. having a no. of discharge chambers involves depositing each film within 2 s after the deposition. The method is useful for depositing a hard C protective film on a magnetic tape.

IT Magnetic tapes
(plasma CVD for manuf. of)

IT Vapor deposition process
(plasma; manuf. of magnetic **recording** medium)

IT 7440-44-0, Carbon, uses
(protective film; manuf. of magnetic **recording** medium)

L52 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN

1996:53331 Document No. 124:163012 Reliability of obliquely deposited Co-O thin film with carbon protective layer. Yoshida, Hideki; **Nishizawa, Yasuhiro**; Ouhata, Hisayo (Audio and Video Research Lavoratory, Matsushita Electric Industrial, Kadoma, 571, Japan). IEEE Transactions on Magnetics, 31(6, Pt. 1), 2940-2 (English) 1995. CODEN: IEMGAQ. ISSN: 0018-9464. Publisher: Institute of Electrical and Electronics Engineers.

AB Advanced ME tape with +5 dB higher output than conventional Hi-8 ME tape at a **recording** d. of 100kBPI was developed. It combines an obliquely deposited Co-O magnetic layer and a diamond like carbon(DLC) protective layer. DLC shows higher durability and higher corrosion resistance than other types of protective layer. The main corrosion product found on ME tapes after and accelerated corrosion test was chlorination of Co. DLC is continuous and nonporous even at a thickness of 10 nm, and probably is the reason for drastic improvement of corrosion resistance. Corrosion resistance of the small cassette tape for Consumer-Use Digital VCR including advanced ME tape was evaluated by the Battelle test. Its storage life was evaluated as >28 yr even in the cassette lid portion.

IT Coating materials
Recording materials
(reliability of obliquely deposited Co-O thin film with carbon protective layer)

IT 7440-44-0, Carbon, properties 11104-61-3, Cobalt oxide
(reliability of obliquely deposited Co-O thin film with carbon protective layer)

L52 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS on STN

1995:549251 Document No. 123:241811 Metal-evaporated video tape with diamond-like-carbon protective layer. Yoshida, Hideki; **Nishizawa, Yasuhiro**; Fujita, Takashi; Murai, Mikio; Takahashi, Kiyoshi; Odagiri, Masaru (Audio Video Res. Lab., Matsushita Electr. Ind. Co., Ltd., Kadoma, Japan). National Technical Report (Matsushita Electric Industrial Company), 41(2), 188-93 (Japanese) 1995. CODEN: NTROAV. ISSN: 0028-0291. Publisher: Matsushita Denki Sangyo K.K., Gijutsu Josei Senta Gijutsu Johobu.

AB The std. **recorded** bit rate of next generation digital VCRs for consumer use (SD mode) is 41.85 Mbps, which means about 3 to 7

times as many **recording** signals as those in conventional analog VCRs for consumer use. An advanced tape with a diamond-like-carbon protective layer has been developed to **record** these digital signals in a compact cassette. The magnetic layer consists of obliquely deposited Co-O layer having a coersivity of 1500 Oe. It has 5 dB higher output and 4 dB higher CNR than the conventional Hi-8-ME tape at a **recording** d. of 100 kBPI. This tape needs no erasure head because of its thin magnetic layer. It has a still-frame life of more than 10 h and there is no output redn. in low-humidity condition. Its archivability is superior to the conventional Hi-8-MP tape. The tape has been selected as the ref. tape of next generation VCRs for consumer use.

IT **Recording** materials
(optical, video, metal-evapd.; with diamond-like-carbon protective layers)

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     FILE 'REGISTRY'
                  E FLUORINE/CN
L2                1 S E3
                  E NITROGEN/CN
L3                1 S E3

     FILE 'HCAPLUS'
L5             3519 S KAZUHIKO E?/AU OR ENDO K?/AU
L6             1323 S TORU T?/AU OR TATSUMI T?/AU
L7             1119 S NISHIZAWA Y?/AU OR YASUHIRO N?/AU
L8             3287 S MORITA T?/AU OR TAKESHI M?/AU
L9           140022 S LUBRIC?
L10                 QUE L2 OR FLUORIN? OR PERFLUORIN? OR F OR F2
L11                 QUE L3 OR NITROGEN? OR N OR N2
L12               8 S (L5 OR L6 OR L7 OR L8) AND L9 AND L10 AND L11
L13               1 S L12 NOT P/DT
L14               1 S L13 AND (1995-2003/PY OR 1995-2003/PRY)
L15              86 S (L5 OR L6 OR L7 OR L8) AND L9
L16              18 S L15 NOT P/DT
L17               2 S L16 AND (1995-2003/PY OR 1995-2003/PRY)
L18               2 S L14 OR L17

=> d l18 1-2 all

L18  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2003 ACS on STN
AN   1998:800158  HCAPLUS
DN   130:84890
TI   Effect of surface treatments on adsorption and tribology of the
     diamond-like-carbon layer for metal-evaporated tape
AU   Miyamura, Takeshi; Yoshida, Osamu; Endo, Katsumi;
     Ishikawa, Akira; Kitaori, Noriyuki
CS   Mechanical Processing Technology Research Laboratories, Kao
     Corporation, Tochigi, 321-3497, Japan
SO   Japanese Journal of Applied Physics, Part 1: Regular Papers, Short
     Notes & Review Papers (1998), 37(11), 6153-6156
     CODEN: JAPNDE; ISSN: 0021-4922
PB   Japanese Journal of Applied Physics
DT   Journal
LA   English
CC   57-8 (Ceramics)
     Section cross-reference(s): 77
AB   Metal-evapd. (ME) tape presents greater problems for smooth tracking
     and has poor durability than metal-particulate (MP) tape; a
     diamond-like-carbon (DLC) layer and a lubricant layer were
     used to cover the magnetic layer to overcome these problems.  The
     surface state of the DLC protective layer must be controlled to
     enable the adsorption of fluorine of the lubricant
     .  We investigated the surface state of the DLC protective layer
     using three types of surface treatments, i.e. aqua dipping,
     N2 plasma treatment, and a combination of the two, to study
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the change in **lubricant** adsorption. We found that **N2** plasma treatment provided the most favorable surface for the realization of optimal ME tape properties.

ST **lubricant** adsorption diamondlike carbon film; surface treatment diamondlike carbon film adsorption; magnetic tape diamondlike carbon film **lubricant**

IT Paraffin oils
(contact angle; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT Contact angle
(effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT **Lubricants**
(fluoroalkyl group-contg.; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT Video tapes
(metal-evapd.; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT Adsorption
(of **fluorine** of **lubricant**; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT Plasma
(surface treatment; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT Surface
(treatments; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT 107-21-1, 1,2-Ethanediol, properties 7732-18-5, Water, properties
(contact angle; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

IT 7440-44-0, Carbon, processes
(diamondlike films; effect of surface treatments on **lubricant** adsorption and tribol. of diamond-like-carbon layer for metal-evapd. tape)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L18 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1997:705366 HCAPLUS
DN 127:349313
TI Experimental and fracture mechanics study of the pit formation mechanism under repeated **lubricated** rolling-sliding contact. Effects of reversal of rotation and change of the driving roller
AU Murakami, Y.; Sakae, C.; Ichimaru, K.; **Morita, T.**
CS Department of Mechanical Science and Engineering, Faculty of Engineering, Kyushu University, Fukuoka, 812, Japan
SO Journal of Tribology (**1997**), 119(4), 788-796
CODEN: JOTRE9; ISSN: 0742-4787
PB American Society of Mechanical Engineers
DT Journal
LA English
CC 55-10 (Ferrous Metals and Alloys)
AB Five rolling contact fatigue tests, Tests {1}-{5} were conducted. In tests {1}-{3}; when a fatigue crack was initiated on the surface of a follower, the test was halted. Then, in Test {1} the rotating direction was reversed. In Test {2} the follower and driver were interchanged, and in Test {3} the test was continued unchanged. In Test {3} the original crack grew to a pit. In Tests {1} and {2} the original crack immediately stopped propagating. In Tests {4} and {5}, mating with a harder roller, a softer roller was used as the follower in Test {4} and as the driver in Test {5}. A typical pit occurred in Test {4}. In Test {5}, surface damage substantially different from a typical pit was generated. Based on these exptl. results, a 3-D crack anal. including the effect of frictional force on the contact surface and oil hydraulic pressure on crack surfaces, was conducted to elucidate the mechanisms of pit formation and surface damage in contact fatigue.
ST fracture mechanic pit **lubricated** rolling sliding; contact reversal rotation roller rolling sliding
IT Fatigue, mechanical
Fracture mechanics
Rolling (metals)
Surface
Surface damage
Surface tension
(pit formation mechanism under repeated **lubricated**

rolling-sliding contact)
IT 12672-16-1, SCM440, processes 12731-93-0, S40C, processes
37268-90-9, S45C, processes 39411-21-7, SNCM420
(pit formation mechanism under repeated **lubricated**
rolling-sliding contact)